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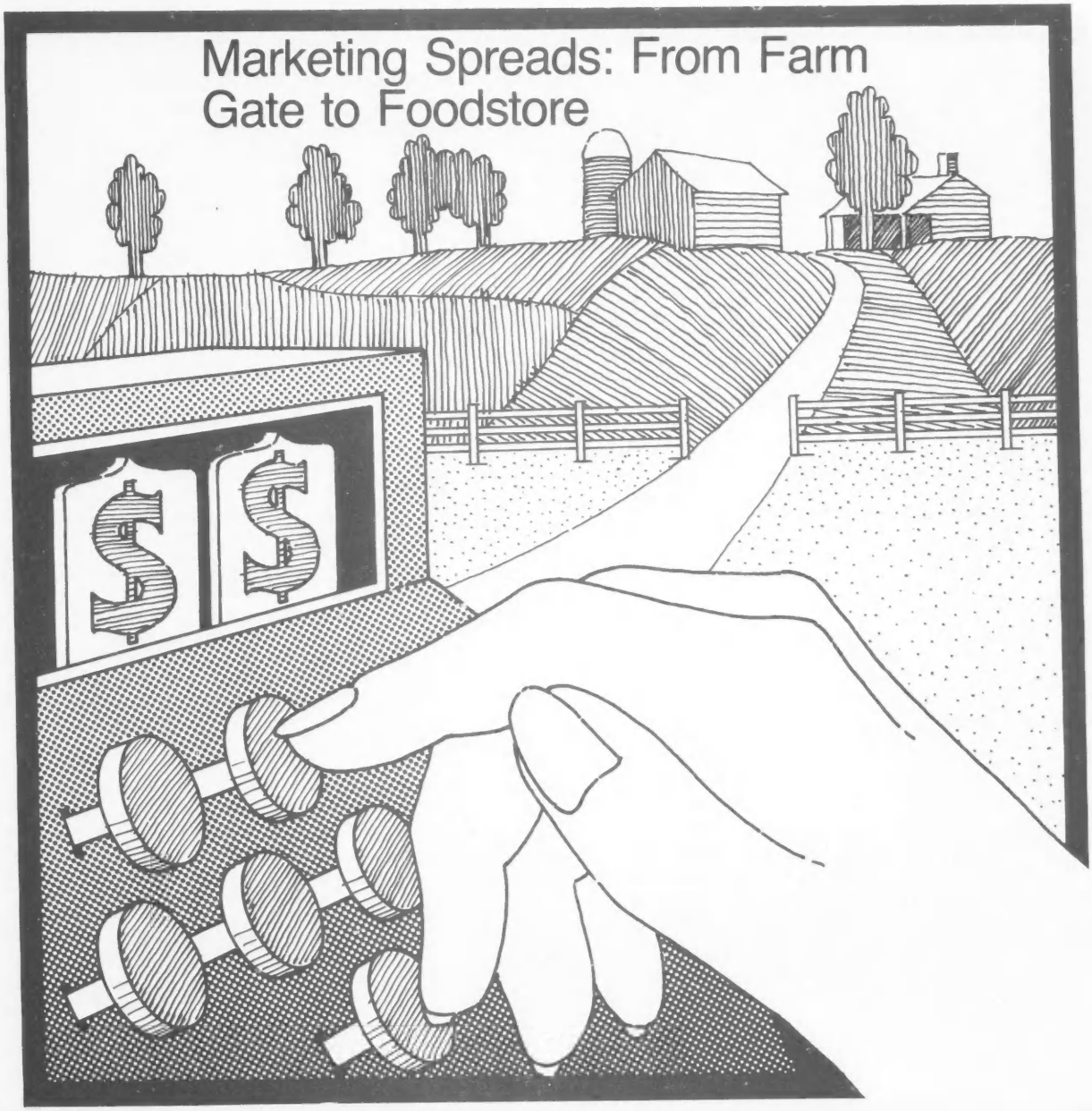
FARM INDEX



Outlook

Cattle numbers—on a downswing for the past 4 years—apparently have bottomed out. In fact, next January could even see some slight rise in the Nation's cattle herd, judging the fact that producers are culling fewer cows and holding more heifers for breeding.

The total herd could reach as many as 112 or 113 million head. While that's 21-million head short of the last cyclical peak in 1975, it would be higher than this past January's 111 million head. And that's a milestone in the current cattle cycle, marking the first upturn in numbers in 5 years.

However, the ending of herd liquidation and the subsequent rebuilding of the herd will put a crimp in beef output this year at least.

Supplies down. The per capita beef supply in 1979 may total only 111 pounds, off about 7 percent from 1978 and the smallest since 1973.

The tight beef supply is bringing a sharp rise in prices for slaughter cattle as well as beef at the supermarket.

The years since the last cyclical peak in 1975 have been rough for cattlemen. The speedup of cattle slaughter during liquidation overloaded retail meat counters. Consumers readily bought up all the beef since they were getting it at bargain prices.

Producers pinched. On the producer side, prices were too low to provide adequate profits for cattle producers, in some cases too low to even cover costs. As a result, some producers sold their cattle, plowed up pastures, and planted cash crops.

Many of these producers may be reluctant to reenter the cattle business, although relatively low feed costs coupled with high prices have done much to restore optimism to the livestock industry.

Good times once again. Cow-calf and feedlot operators are finally receiving the dollars-and-cents incentives they need to increase production.

Farm prices of cattle are at record highs. Recently Choice fed cattle at Omaha were selling for $78 per 100 pounds and Choice 600-700-pound feeder cattle at Kansas City topped $89.50 per hunderweight.

Feeder cattle prices are rising faster than fed cattle prices because of the heated bidding for the limited supplies by both cattle feeders, who want to put the animals on feedlots, and stocker operators, who plan to put them on pasture or grass.

A potential danger. Cow-calf producers now have the chance to recoup the heavy losses they've borne since 1974. But comingled with the opportunity for profit is also the opportunity to overproduce, creating another downturn in the cattle cycle.

Even though the cattle cycle has apparently reached its turning point, it will take several years to boost production significantly, due to the biological lag between breeding a cow and getting her offspring to market.

Thus, the next couple of years pose no particular danger of oversupplies. But what about later, say the mid-1980's? The potential is there, if output is stepped up too much, to once again overload the market.

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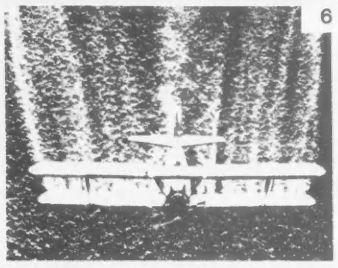

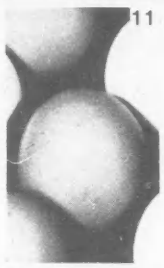

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Martha Newton, Editor

Adrie Sardonia Custer, Jenny Lind, Geraldine Schumacher, Contributing Editors; Jonathan Kirk, Art Director

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Farming the Natural Way

This is the third in a series of articles on the interests and concerns of small-scale farmers—those with gross annual sales of less than $20,000.

Small-scale farmers have said they want more information on organic farming—the practice of reducing or shunning chemical fertilizers and pesticides in favor of organic materials, crop rotations with legumes, and natural pest control.

Their reasons are twofold. First, they want to cut the costs of production. Fertilizers and pesticides account for a large share—about 13 percent—of crop and livestock production expenses.

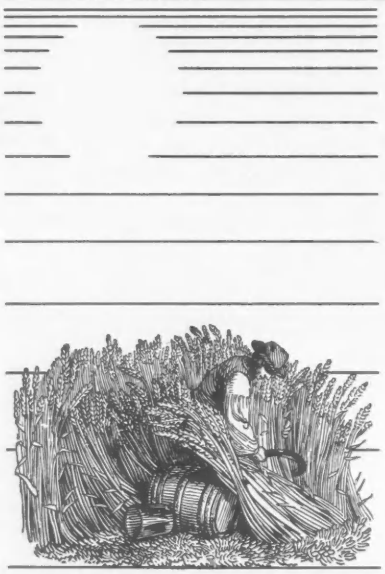
Second, some small-scale farmers are concerned about the effects of chemicals on the environment and on the quality of the food itself.

They remain concerned about food quality even though numerous experiments that have compared the levels of different essential nutrients in crops grown with organic fertilizers as opposed to inorganic materials have shown only small differences, with the advantages favoring the inorganic as often as the organic forms.

These farmers often have roadside stands where they sell "organically grown" products to health food enthusiasts and other consumers. Some sell directly to "natural" food stores.

The natural way

USDA stresses that farmers who don't use chemicals must supply nutrients to the soil and control weeds and other pests by other means, such as utilizing crop rotations, mulches, animal and municipal wastes, and green manures.



Crop rotations. In the past, legumes and legume-grass mixtures were included in crop rotations to supply nitrogen to the following crop as well as forage for livestock. Legumes with deep-root systems also helped open up impermeable subsoils.

However, in the past 2–3 decades, supplies of commercial fertilizers were so abundant and so cheap, that nitrogen could be purchased in the bag at less cost than it could be obtained by growing legumes. This greatly reduced the need for crop rotation, except on certain problem soils or where disease was a major factor.

The amount of nitrogen a legume adds to the soil depends on the plant species and how it is managed. For instance, soybeans are a legume, but most of the nitrogen they can fix is removed as protein in the harvested beans.

Alfalfa, and sweet, red, and Ladino clovers are among the more effective legumes for building up soil nitrogen.

As a general rule, the more top growth turned under when a legume field is plowed, the more nitrogen is added to the soil. A perennial such as alfalfa likely will add 100 pounds of nitrogen per acre to the soil, the same amount that is applied to a typical acre of corn.

Besides nitrogen, legumes add smaller amounts of phosphorous, potassium, and other nutrients to the soil. In addition, crop rotations that include a legume or legume-grass can reduce wind and water erosion, increase soil organic matter, improve soil structure, and, in some cases, decrease weeds, insects, and diseases.

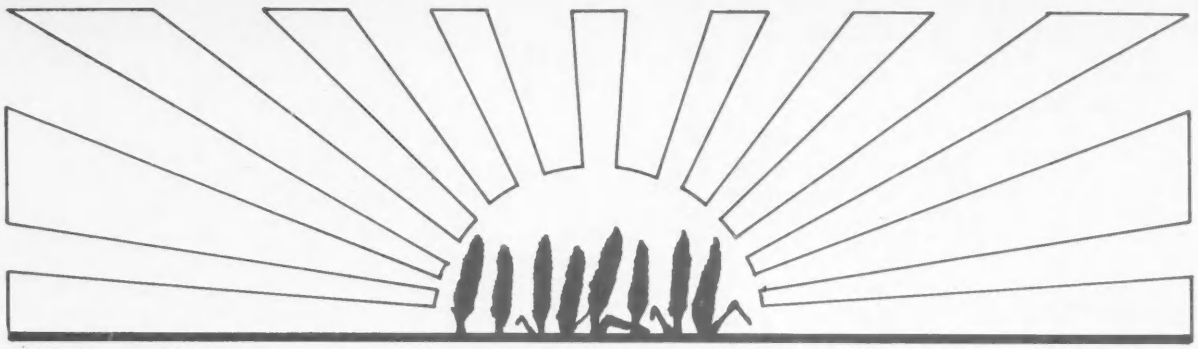
Where land and labor charges are low and the cost of commercial nitrogen is high, a crop rotation system which uses a legume may be one way a farmer can increase his profits.

Mulches. The use of mulches to maintain soil structure, conserve moisture, modify temperature, increase the availability of plant nutrients, and reduce erosion is an old practice, possibly dating back to the beginning of agriculture.

Among the materials commonly used for mulching are crop residues, sawdust, woodchips, manure, paper, plastic, and even stones.

Certain mulches can cause growing plants to develop nitrogen deficiencies, due to their high carbon and low nitrogen content.

High costs and limited supplies of commercial mulching materials have restricted their use largely to the production of relatively high-value crops, special uses, and circumstances in



which the need to conserve moisture or prevent erosion is acute.

Animal wastes. Animal wastes applied to farmland supply plant nutrients and may improve the physical structure of soils.

However, when using manure, the farmer should be aware that:

- The nutrient content is highly variable and excessive applications may result in nitrate leaching.
- Up to half of the total nitrogen may be lost within 1 week if stored improperly.
- If incorrectly spread, it can pollute surrounding areas via runoff water.

Other areas of concern are salt accumulations, unpleasant odors, metal toxicities, and pathogen hazards.

Since approximately 2 billion tons (wet weight) of manure are produced each year in the U.S., it would seem that it could replace an even larger part of the country's chemical fertilizer requirements than it already does. (Commercial fertilizers currently account for 9 million tons of the nitrogen used each year; legumes, about 2 million; and manure, 1.2 million tons.)

However, manure cannot substantially replace chemical fertilizer because:

- A large part of it is already being used in conjunction with the commercial material.
- Approximately half of it is not collectable.
- It contains only 1 to 2 percent nitrogen.
- Half its nitrogen is lost by leaching, erosion, and/or volatilization before being utilized by a crop.
- Only half its nitrogen is available for crop use the first year after application.

Consequently, it is estimated that animal wastes can supply enough nitrogen to produce a 200-bushel corn crop on only 1 percent of the total cropland in the U.S.

Because of these drawbacks, manure is not considered a substitute for fertilizers, but as a valuable additive that can improve soil structure, supply some nutrients, and help solve a waste disposal problem.

Municipal wastes. For many years, sewage sludge and effluents have been spread on land as a means of disposal and to utilize the nutrients in the waste.

Experts stated that in 1973 (latest available data) all the sewage sludge generated in the U.S. could have supplied 2.5 percent of the nitrogen, 6 percent of the phosphorus, and 0.5 percent of the potassium sold as commercial fertilizer in that year.

Some of the available sludge cannot be used on agricultural land because it contains high levels of heavy metals that may be toxic. Its use would increase the concentration of these metals in edible crops.

If sludge is used on farmland, it must be constantly monitored to ensure that there is no buildup of toxic elements that could be harmful to man or animals.

Green manures. Green manure crops—usually annuals, either legumes or grasses—are grown and plowed under to improve the soil. They were used in China as far back as 3,000 years ago.

Green manures can add nutrients to the soil, increase the general level of fertility, supply organic matter, reduce erosion losses and leaching of nutrients, and improve the physical condition of the soil.

They can also cause problems, such as an increased incidence of diseases, depletion of soil moisture, increased populations of insects and nematodes, and adverse effects on the next crop due to toxic material in the residue.

The desirability of using green manures, therefore, depends on the soil, the climate, and the crop.

Their effects are generally beneficial, however, and most of the harmful effects can be avoided by following good management practices. The greatest need for them is in the warmer climates, where high biological activity rapidly depletes soil organic matter reserves.

Of the various green manure crops tested in the Southeastern U.S., legumes were found to be superior to nonlegumes; winter legumes were better than summer ones.

Not for small operators only

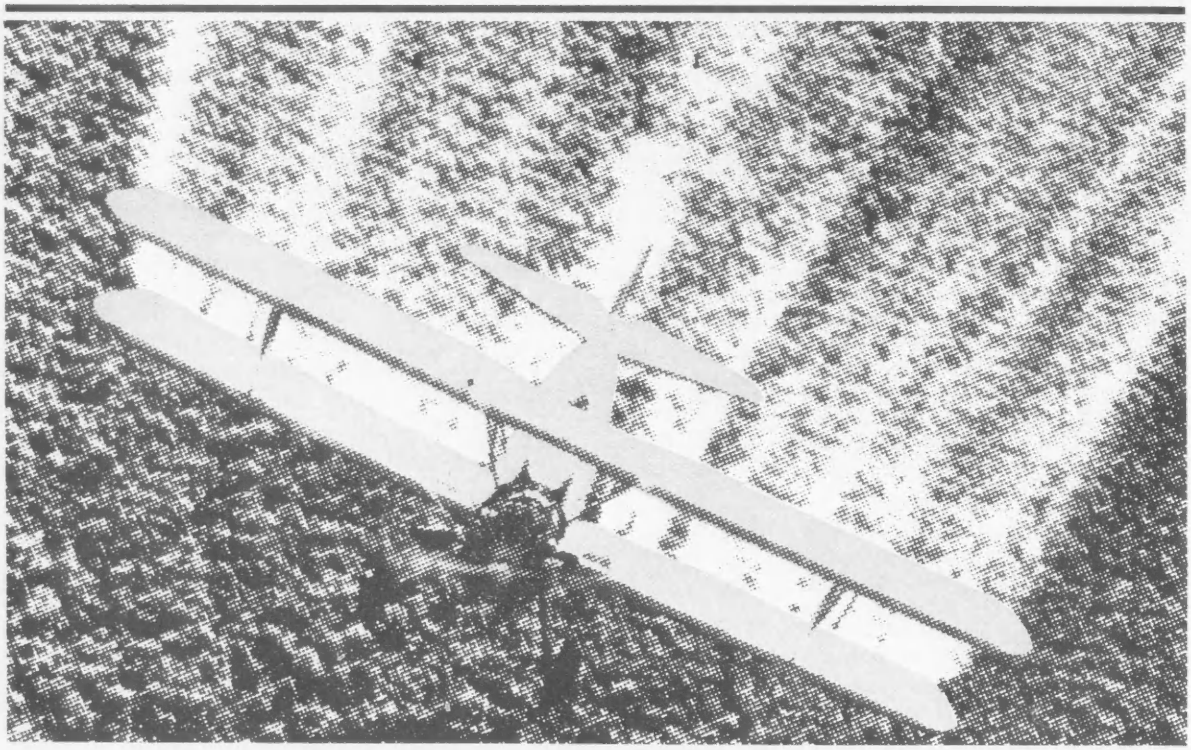
While organic farming has traditionally been linked with small-scale farmers and backyard gardeners, many large operators are now expressing interest.

The majority of the country's farmers and agricultural policymakers still strongly feel that adequate and reasonably priced food and fiber products can only be produced by traditional techniques.

But there are others who feel equally strongly that nontraditional, nonchemical, intensive organic or biological techniques should be more fully considered in food and fiber production.

[Based on *A Bibliography for Small and Organic Farmers, 1920 to 1978*, prepared by J.W. Schwartz, Science and Education Administration.]

Pesticide Preview



Just about 2 percent of the farmer's gross income goes for pesticides. But without them, the pest would cause a much bigger cut in farm income.

Pesticide prices this year are reported to be up less than 5 percent on average. This rise is attributed to increased production costs due to higher prices for petroleum and increased labor costs. Manufacturers are able to offset some of this with slight changes in their chemical r · xtures.

Supplies of pesticides are reported to be 5 percent more overall than last year, with a rise in insecticide and herbicide stocks slightly offset by a drop in fungicides.

Pesticide stocks

Stocks of insect and weed killers at the start of the year totaled more than 25 percent of manufacturers' 1978 production.

This, coupled with a slight increase in production, should make available supplies adequate to meet the 5 percent increase in demand likely to result from expected heavier application on existing cropland and more land being planted.

Use of weed killers for corn and soybean fields is reported to be up 5 percent, with 90 percent of all corn acres herbicide treated. Use will probably be up 6 percent for cotton and 2 percent for small grains.

Herbicide use up

Increases are primarily the result of more intensive use as farmers continue to switch from band (row-by-row) to broadcast (whole field) applications and to use more multiple treatments on problem weeds, such as fall panicum in corn fields. Farmers will also use some herbicides on previously untreated land.

Insecticide use is likely to increase by 8 percent for cotton, which takes into account 7 percent more acreage. Since cotton infestations were light

last year, a typical infestation this year would also mean somewhat more insecticide use.

With expected corn acreage almost unchanged, use of insecticides will be up only slightly for this crop.

Per acre pesticide costs

While the overall pesticide cost as a percentage of total farm expenses is relatively low, the per acre costs for some crops are substantial.

Peanuts require the greatest amount per acre, with pesticides accounting for just over 20 percent of all production costs. Peanut farmers will probably put out $58 per acre for pesticides this year.

Small grains need the least amount of pesticides, about $1.20 per acre for wheat. Soybeans will likely require about $9 an acre, just over 16 percent of total production costs.

These pesticide costs do not include application, which can run as high as an additional 50 percent. Application costs are expected to be up about 3 percent this year.

Differing costs

Costs vary, however, according to the growing region. For example, cotton growers in the humid Delta and Southeast spend up to eight times more for pesticides than those in the Southern Plains.

The amount spent for pesticides needed for peanut production in the Southeast is three times more than in the Southwest.

As the use of pesticides continues to increase, more and more concern is being expressed over the health and environmental hazards involved.

Federal pesticide regulations require the Environmental Protection Agency to reregister all pesticides registered before the current law was enacted, and some pesticides have been banned.

Lengthy development period

In addition, the time necessary to develop and test new pesticides has stretched from 6 to over 9 years. As a result, the selection of pesticides available is diminishing.

Manufacturers' research and development costs have also risen markedly—approximately eightfold in the past 10 years. These higher costs could limit new products and could also make specialized pesticides more difficult to obtain. Eventually, costs and financial risks involved could limit production to just a few manufacturers, possibly raising prices.

[Based on the manuscript, "Evaluation of Pesticide Supplies and Demand for 1979," by Theodore R. Eichers and Paul A. Andrilenas, National Economics Division.]

Two New Methods

Because of the importance of pest control in agriculture and restrictive regulations and possible health hazards to humans as a result of using pesticides, two alternative approaches to pest control are being studied.

One—Integrated Pest Management (IPM)—combines chemical and nonchemical techniques to combat pests. Officials in both USDA and the Environmental Protection Agency support the project.

With IPM, the farmer doesn't just spray chemicals—the pest is identified, its stage of development noted, and its potential for damage calculated.

IPM also advocates the use of trap crops, a variation of the gardener's old way of decoy. In this method, a crop the insect is known to prefer, such as alfalfa, is planted to attract the destructive pest away from the main crop, such as cotton.

Two disadvantages of IPM are that it takes more time and people to operate the system, and many years to realize the results.

The second new pest control program, a part of a combined USDA and National Weather Service project called Green Thumb, is expected to begin testing in a selected area later this year.

One aspect of Green Thumb that is similar to IPM is to identify the stage of insect development. With the aid of computers, this method shows farmers the proper mix of insecticides to use and when to spray for maximum results.

The insect control portion of Green Thumb is projected to have the potential to lower the use of pesticides by 20 percent in the U.S.

In the future, a combination of programs with man and computer may lead to more effective use of fewer pesticides, resulting in a better yield from America's farmland, greatly reduced hazards to the environment, and substantial savings in cost.

Marketing Spreads: From Farm Gate to Foodstore

It won't ease the pain in your pocketbook to know what's behind those rising food bills in the supermarket, but a brief look at the costs that go into producing and marketing food products may put the pain in perspective.

Americans spent $140 billion in foodstores on domestically produced farm foods last year—11 percent more than the year before. The increase was the result of higher retail prices, since there was little change from 1977 in the volume of food purchased.

Another $68 billion was spent for farm foods in restaurants and institutions for a total outlay of $208 billion.

The farmer's share

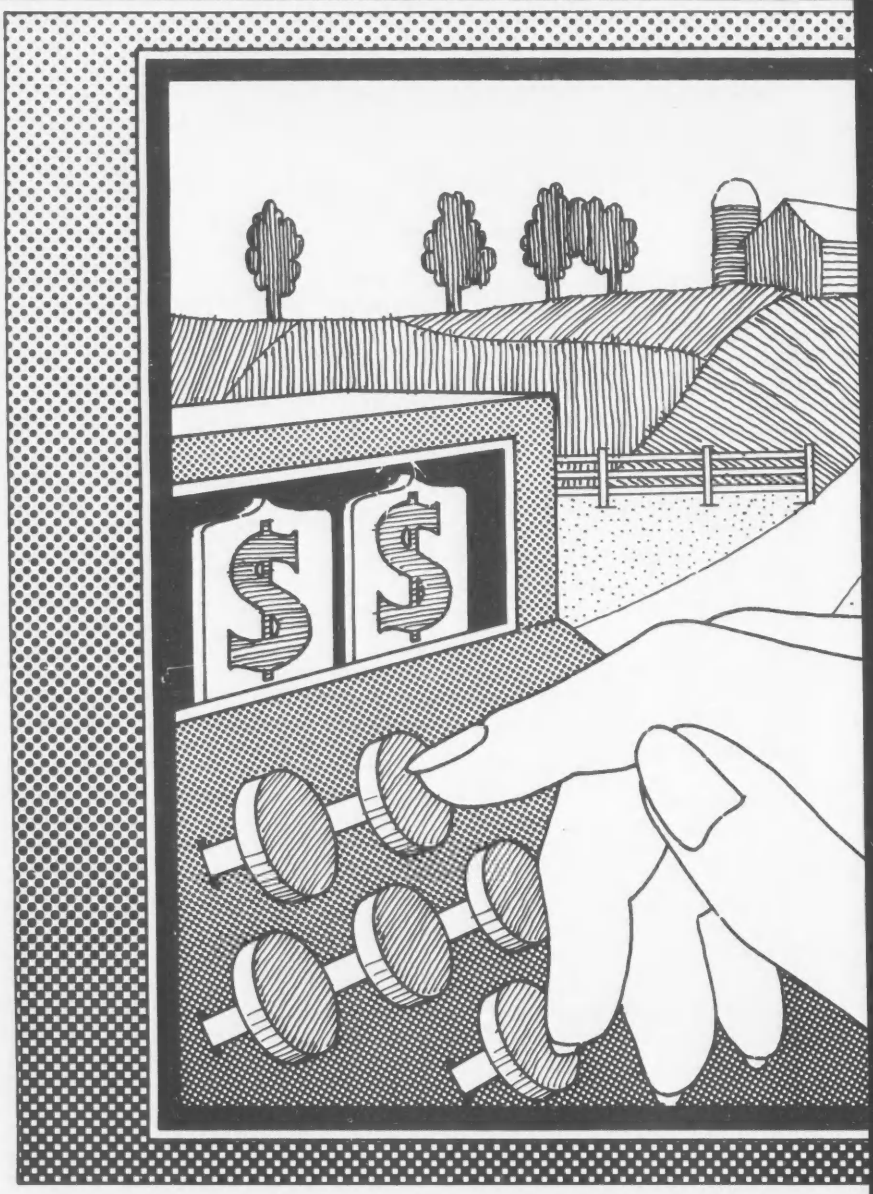
Of that $140 billion, farmers received $55 billion—up $8 billion from the year before—or an average of 39 cents of each dollar spent in the grocery store for domestically produced farm foods in 1978. This was almost 2 cents more than in 1977 and the first increase in 5 years. Marketing costs took the remaining $85 billion.

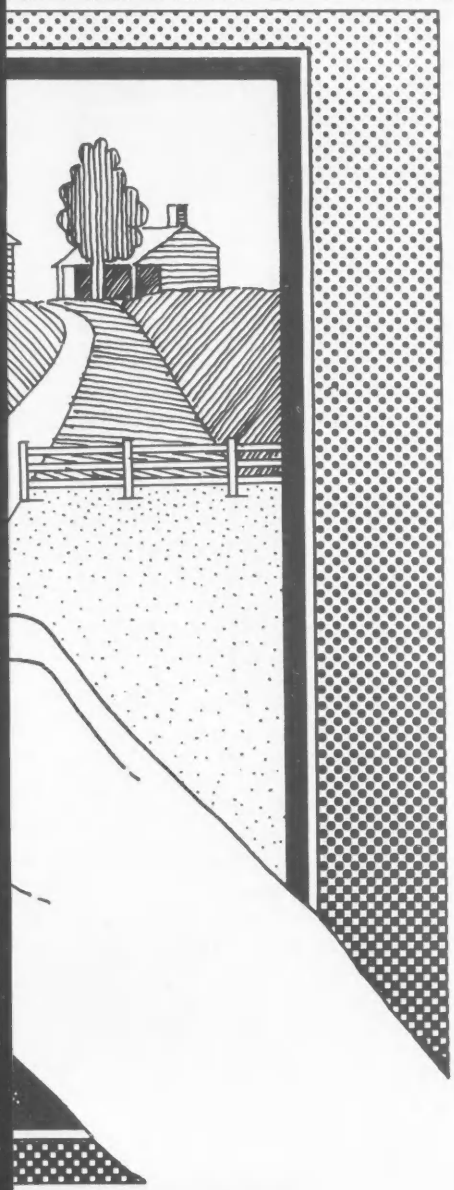
Over the years, marketing costs have been the principle factor behind rising food prices at the grocery store. But last year was different. A major part of 1978's rise in food prices was due to the higher prices farmers received for their food commodities.

Higher farm values

The farm value of food commodities increased more than retail food prices last year, and accounted for half of the rise in grocery store food prices of 10.5 percent in 1978.

The farm value is an estimate of the amount farmers receive for their raw farm products. It's determined from the actual farm price of a raw product and





the amount of that product needed to equal a retail unit when it's on the supermarket shelf.

Farmers across the country received an average of 16 percent more for their food commodities in 1978 than they did in 1977—the first significant increase since 1973. Red meat led the increase, with livestock producers receiving an average of 25 percent more for their cattle and hogs than they did the year before.

To market

The portion of the retail price of an item that goes to the farmer varies widely among food products. After most products leave the farm, they are processed or prepared in some way for shipment or sale at retail.

The more a commodity is changed as it moves through the marketing system to the consumer's shopping cart, the larger the share of the retail price that goes to marketing costs. In general, highly processed crop products have the lowest farm value, while animal products have the highest.

Marketing costs

Marketing costs continued their long-term rise and were responsible for 40 percent of the increase in retail grocery store food prices last year. This upward trend in marketing costs has caused retail food prices to go up even in those years when farm prices have declined.

Most of last year's increase in marketing costs was the result of the rising prices of inputs purchased by food marketing firms, particularly labor and food packaging materials.

Higher prices for fish and imported foods accounted for the remaining 10 percent of the rise in retail grocery store food prices last year.

The farm-retail spread

A good general indicator of marketing costs is the farm-retail price spread—the difference between retail price and equivalent farm value. It represents the charges for assembling, processing, transporting, and retailing after food commodities leave the farm.

Last year, the marketing spread increased 8.2 percent. Unlike the farm value, the farm-retail price spread has increased in all but 2 of the past 20 years.

There are several reasons why the farm-retail spread does not move up or down with farm values. At any particular time, it takes basically the same amount of labor and other marketing inputs to turn a raw farm product into a unit of consumer product whether the farm value for that product is high or low.

Widening spreads

When the spread between retail and farm prices widens, it generally reflects rising wages and salaries of workers and rising prices of inputs bought by marketing firms from nonfarm businesses that are not directly engaged in food marketing.

These intermediate inputs represent such goods and services as packaging materials, fuels, automotive supplies, insurance, rental of buildings and equipment, transportation services, and repair work.

Over time, prices of these inputs have tended to parallel rather closely the movements in the general price level. Last year, prices of these inputs rose about 7 percent and average

hourly earnings of food industry workers rose 8.7 percent.

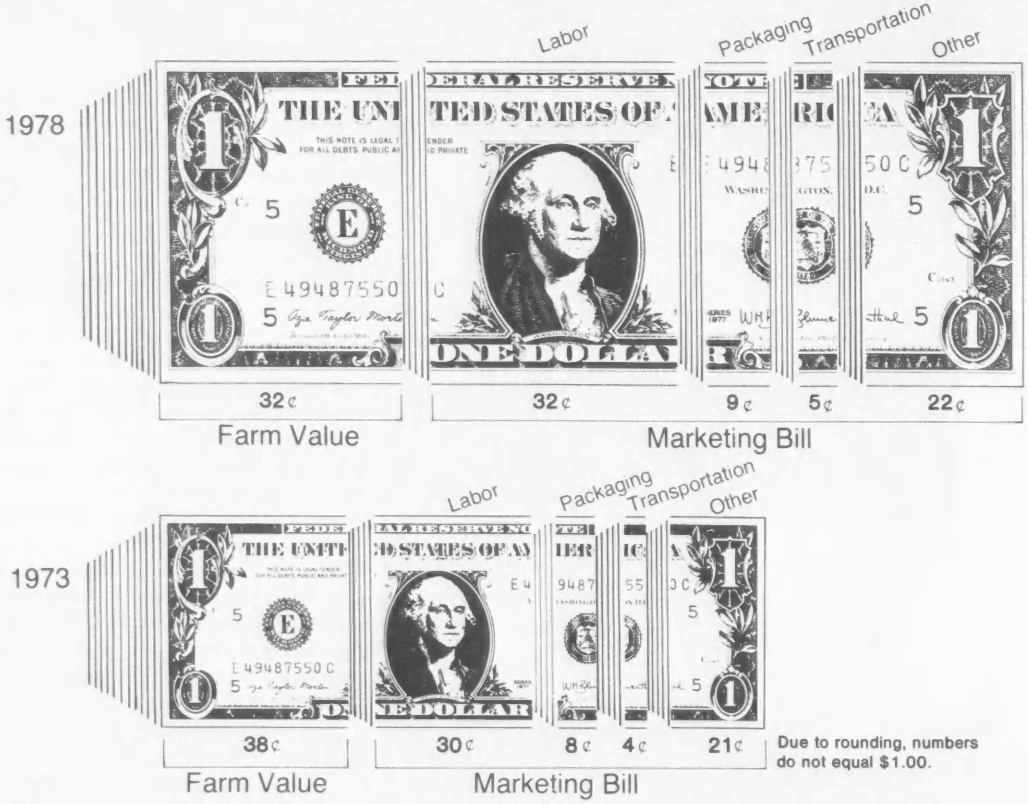
Spiraling costs

There is little chance that any of these marketing costs will ever move downward. Wages of many marketing-firm employees are fixed by contract between unions and employers. Rents usually are not changed until leases expire. Freight rates and charges for fuel and electricity are partially set by Government agencies and are changed only after an application has been made and public hearings held.

There are probably more rigidities in the marketing cost structure now than ever before. This fact, along with the persistent rise in the general economic level, affects the prices of the many goods and services used in food marketing and contributes to a strong upward pressure on price spreads, and therefore, retail food prices.

[Based on *Developments in Marketing Spreads for Food Products in 1978*, Agricultural Economic Report, No. 420]

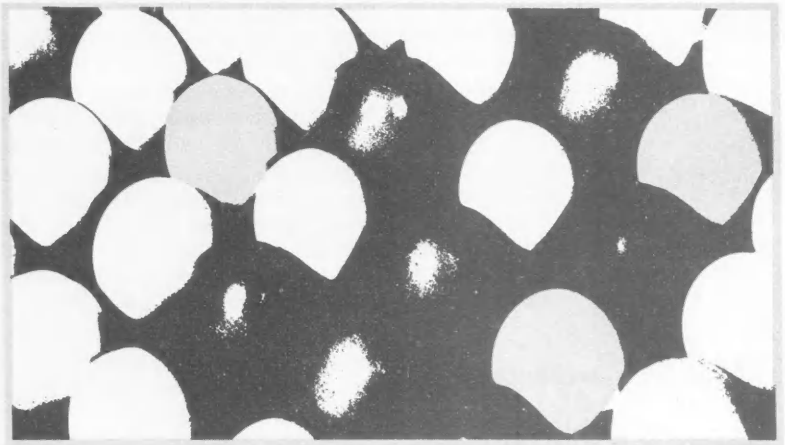
Where The U.S. Food Dollar Goes



Due to rounding, numbers do not equal $1.00.

Other expenditures include business taxes, corporate profits, energy, depreciation, rent, advertising, and numerous other costs.

A Look at the Poultry and Egg Industries



A dollar a dozen for eggs. Eighty cents a pound for broilers. A dollar a pound for turkeys.

These are the kind of average prices consumers would be paying regularly for poultry products if production and marketing costs actually reflected the steep increases in input prices during the 1970's.

Instead, retail prices reached only about 80 cents a dozen for eggs during 1975-77, and 60 and 70 cents a pound for broilers and turkeys, respectively.

Increased productivity is one of the major elements in slowing inflation. In recent years, productivity gains appear to have slackened substantially in many industries—but for poultry and eggs, productivity continues to climb.

Production costs

Farmers' production costs have risen about 50 percent since 1970. Most of the increase comes from feed cost increases of 65 to 75 percent.

Feed costs currently account for over two-thirds of production costs for a dozen eggs, and over 70 percent of broiler and turkey costs (per pound liveweight).

Production costs for eggs, broilers, and turkeys trended downward till the late 1960's because of greater efficiency due to large units and better breeding stock, feeding, equipment, management, and disease control.

Closer coordination of on-farm activities with marketing functions through vertical integration also held down costs.

Change in direction

Since the late 1960's, price rises for production inputs have outstripped gains in productivity, pushing production costs up sharply. The most spectacular rise in actual production costs occurred in 1973 due to a spurt in feed prices.

Much the same has happened on the marketing side.

Costs for wages, salaries, containers, and overhead have about doubled during this decade, while energy prices have about tripled.

The result has been a hefty one-third increase in the farm-to-retail price spread for eggs and poultry products since 1970. Among the components of the total spread, processing costs rose the most—over 50 percent.

But here again, the increase in the price spread would have been even greater had not productivity benefited from economies of scale, mechanization, and fuller use of facilities.

Slowdown in the future

Though there's still lots of room for boosting productivity, future gains are not likely to serve as a big offset to rising input costs.

For one thing, improvements in productivity may not be as large as those prior to 1970—simply because the egg and poultry industries have already come so far. For another, energy considerations may slow the move to more labor-saving equipment—the source of so many sizable gains in the past.

Producers also face possible restrictions on several antibiotic drugs which have long been a mainstay of their operations. If use of these drugs is restricted, improvements in feed conversion and mortality reductions may be smaller than in the past.

On the marketing side, in addition to the energy constraints, the imposition of new kinds of public requirements for such things as waste management and pollution control could also affect productivity increases.

[Based on "Costs, Prices, and Productivity in the Poultry and Egg Industries," by George B. Rogers, National Economics Division, in the *Poultry and Egg Situation*, PES-300, December 1978.]

Plain Package, Pleasing Price

Good things can come in plain packages, and they can save the food shopper money, too.

Generic food products—items that carry no brand names or trademarks—may be the answer to continually rising food prices for shoppers who are price and value sensitive.

The labels on generic products—generally black and white with bold lettering—state only the basic name of the product it contains, such as "sweet peas," and such essential information as ingredients, net contents, and the name of the manufacturer or distributor.

A break from tradition

Traditionally, retailers have sold two major types of brands: national, or name, and store.

National brands feature top quality and are usually heavily promoted and advertised by their manufacturers; store brands get considerably less advertising support, but are generally well-established products. They offer nearly the same quality as national brands, but at a lower price.

In recent years, however, store brands have saved the consumer less and less—the price differential between national and store brands has narrowed from an average of about 20 percent to about 13 percent.

So increasingly, retailers have turned to generic products to help them develop a more distinctive low-price image and offer consumers a greater choice in price and quality.

Rapid growth

Generic products were first introduced into this country in late 1977 and quickly spread from coast to coast. Currently, about 100 different food retailing firms carry generic labels.

Most foodstores carry between 50 and 75 different generic products. Generally, each item is offered in only one size. Canned corn, beans, and peas are the most popular food items, and virtually all firms carry them.

Other popular food items are canned tomatoes and products, fruits, and fruit and vegetable beverages, packaged macaroni and cheese dinners, and larger sizes of dry pet foods.

Less popular items

Carried less frequently are ready-to-eat cereals, baking needs—including oils and shortenings—tea bags, peanut butter, mayonnaise, cheese, and packaged processed meats.

Paper goods are the best sellers among nonfood generic products, fol-

lowed by laundry and dish detergents, plastic wrap, sandwich bags, and trash bags.

Most grocery stores place all generic products together in one mass display—making the plainly wrapped generic products highly visible and setting off their distinctiveness.

Unfortunately, this display technique makes it more difficult for shoppers to compare prices of generic products with their name and store brand counterparts.

Shoppers save

Generics can offer substantial savings over national brands. Retailers contacted by USDA generally said consumers who buy generic products can expect to save an average of 25 percent over national brands and 15 percent over store brands.

But the savings can vary considerably—from none at all to over 50 percent, depending on the individual product and retailer.

Savings from generic products come primarily from three sources: (1) less expensive ingredients; (2) less expensive advertising and promotion; and (3) less expensive packaging and labeling.

Ingredients: grade C

Generic food items generally use USDA grade C produce, with some grade B to fill in where needed. National brands and top line store brands, on the other hand, use primarily grade A and some grade B. All three grades are safe, wholesome, and nutritious, and are packed under the same sanitary standards.

The savings comes from the substantial difference in the wholesale price of grade C and grades A and B. Grade C products may have less uniform size, color, texture, and maturity, but grade C is typically priced from 10 to 35 percent below grade A.

There is some concern that there will not be enough grade C items to meet the increased demand from generic products. It is estimated that about 10 to 20 percent of the fruits and vegetables packed each crop season are grade C, depending on such factors as disease, weather, and prices.

Advertising: reduce costs

The reduced advertising costs of generics also contribute to price savings—but not as much as using less expensive ingredients.

National brands are the most heavily promoted, because their retail prices support not only national advertising campaigns, but also the more costly and complex sales distribution networks and the development of new products by these firms.

Store brands avoid much of the new-product development and introduction costs by imitating established national brands. Although advertising expenses for store brands are considerably less than for national brands, store-brand advertising has increased in recent years, probably contributing in part to the narrowing price difference between store and national brands.

Plain packaging

Cheaper packaging and labels are also a source of savings for generic products. The black-and-white generic labels are printed on lighter, less expensive, nonvarnished paper. Glass jars do not have back labels, and all labels minimize design, photography, and printing expenses.

The plainer labels, however, represent only a very small source of savings. The cost difference between color and black-and-white labels is a one-time setup cost of about $150 for black and white, compared with $500 for color.

Additional savings come from limiting the selection of each generic product to only one size. This reduces handling, ordering, and warehousing costs.

Retailers' strategy

Although generics have spread rapidly, there are still many markets in which they are not available, since many retailers have not followed the trend to generic labels.

Some retailers are choosing to compete with generics by lowering prices on some of their existing store-brand products. Others are consolidating their second- and third-line store brands into a new store label that is similar to generics in quality and price but will retain the retailer's label. In any case, the consumer benefits from reduced prices.

In summary, generics generally cost significantly less than national store brands. And while generics often use lower-grade ingredients, the quality difference from the consumers' point of view may not be that significant.

Though it is still too early to measure the longrun success of generic products, initial sales show generics have hit a responsive chord with many shoppers.

[Based on "Generic Labeling," by Charles Handy and Naaman Seigle, National Economics Division, in the *National Food Review*, September 1978.]

Recent Publications

Single copies of the publications listed here are available free from *Farm Index*, Economics, Statistics, and Cooperatives Service, Rm. 482 GHI, 500 12th St., SW, U.S. Dept. of Agriculture, Washington, D.C. 20250. However, publications indicated by (*) may be obtained only by writing to the experiment station or university indicated. For addresses, see July and December issues of *Farm Index*. Publications marked with (#) may be purchased from NTIS, U.S. Dept. of Commerce, 5285 Port Royal Rd., Springfield, Va. 22161, at the price listed.

Household Expenditure Patterns in the United States. Larry E. Salathe, National Economics Division. TB-1603.

The impacts of changes in income and household size on the purchase of 117 items, including 109 food groups, are measured in this study. Each is expressed in terms of an elasticity, which measures the percentage change in expenditures generated by a 1-percent change in either income or household size

Factors Affecting Supply, Demand, and Prices of U.S. Rice. Warren R. Grant and Mack N. Leath, National Economics Division. ESCS-47.

A specially developed economic model aided this study of the interrelationships of economic and institutional factors affecting the supply, demand, and prices of U.S. rice. The demand section of this study covers the 1950-75 time period, while the supply section covers 1950-76. Rice ranks eighth in value of U.S. crop production and is especially important in certain regions.

Structure of the Feed Manufacturing Industry, 1975-A Statistical Summary. Carl J. Vosloh, Jr., National Economics Division. SB-596.

The feed manufacturing industry was surveyed in 1976 to obtain data on procurement, inventory, processing, distribution, and storage functions. These data complement similar statistical information collected on the industry in 1969. These two historical benchmarks should provide a sound basis for evaluation of and projections relating to the industry. Comparison of data will be made and findings used to develop important trends and industry organization.

Economic Analysis of Solid Waste Systems for Rural Cities in the Southeast. J.R. Russell, Natural Resource Economics Division. ESCS-49.

This is the second report of a broad study designed to describe and analyze solid waste management systems in rural areas of the Southeastern U.S. The first report, *Solid Waste Management Systems in the rural Southeast* (AER-333), published in May 1976, described existing systems operating in the rural areas. This report focuses on the costs of solid waste management systems of rural cities in the Southeast with less than 10,000 population.

Evaluation of Pesticide Supplies and Demand for 1979. Theodore R. Eichers and Paul A. Andrilenas, National Economics Division. AER-422.

This report is prepared annually to provide manufacturers, distributors, growers, and policymakers with comprehensive pesticide situation and outlook information. Supply sections are based on a survey of pesticide manufacturers and on discussions with distributors; demand sections are based on January 1979 farmer planting intentions and on available data on rates of use. Information on pesticide regulations is based on data from USDA, the U.S. Environmental Protection Agency, and other sources.

The Educational Level of Farm Residents and Workers. Frank A. Fratoe, Economic Development Division. RDRR-8.

Despite their declining numbers, farm residents and workers remain an important segment of the American population. Their socio-economic characteristics, including education, are analytically noteworthy. This report examines the educational characteristics of the farm-related population, using educational data available from only a few secondary sources. It should be useful to policymakers seeking basic data on rural education.

Do Food Stamp and Other Customers Buy the Same Products in Supermarkets? Paul E. Nelson, National Economics Division. AER-421.

In this study food purchases of food stamp and all other customers, including those eligible for but not participating in the Food Stamp Program, are compared. Both groups allocated greater proportions of their food purchases to meat, poultry, and fish than did USDA's Thrifty Food Plan. They allotted similar proportions of their food dollar among the various food product groups, although food stamp customers spent more per shopping trip for 22 of the 27 food products surveyed.

Economic Trends

[1]Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. [2]Beginning January 1978 for all urban consumers. [3]Revised to adapt to weighting structure and retail price indexes for domestically produced farm foods from the new Consumer Price Index for all urban consumers (CPI-U) published by the Bureau of Labor Statistics. [4]Annual and quarterly data are on a 50-State basis. [5]Annual rates seasonally adjusted first quarter. [6]Seasonally adjusted. [7]As of March 1, 1967. [8]As of February 1.

Source: USDA (Agricultural Prices, Foreign Agricultural Trade, and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Monthly Retail Trade Report, and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force, Wholesale Price Index, and Consumer Price Index).

Item	Unit or Base Period	1967	1978 Year	1978 March	1979 Jan.	1979 Feb.	1979 March
Prices:							
Prices received by farmers	1967=100	—	210	200	232	241	246
Crops	1967=100	—	203	197	209	216	214
Livestock and products	1967=100	—	216	204	252	264	274
Prices paid, interest, taxes, and wage rates	1967=100	—	219	214	234	238	243
Prices paid (living and production)	1967=100	—	212	206	225	229	234
Production items	1967=100	—	216	211	230	235	243
Ratio[1]	1967=100	—	96	93	99	101	101
Producer prices, all commodities	1967=100	—	209.3	203.7	220.7	223.9	226.4
Industrial commodities	1967=100	—	209.4	204.1	219.9	222.4	225.1
Farm products	1967=100	—	212.7	205.3	230.1	240.5	242.5
Processed foods and feeds	1967=100	—	202.6	196.8	215.3	218.7	220.4
Consumer price index, all items[2]	1967=100	—	195.4	189.8	204.7	207.1	209.1
Food[2]	1967=100	—	211.4	204.2	223.9	228.2	230.4
Farm Food Market Basket:[3]							
Retail cost	1967=100	—	199.4	190.7	213.3	218.5	220.6
Farm value	1967=100	—	207.4	196.3	230.8	239.2	242.0
Farm-retail spread	1967=100	—	194.5	187.4	202.6	205.9	207.7
Farmers' share of retail cost	Percent	—	39.3	38.8	40.9	41.3	41.4
Farm Income:[4]							
Volume of farm marketings	1967=100	—	122	98	130	103	—
Cash receipts from farm marketings	Million dollars	—	110,221	8,134	10,607	8,836	—
Crops	Million dollars	—	52,180	3,554	5,114	3,759	—
Livestock and products	Million dollars	—	58,041	4,580	5,493	5,077	—
Gross income[5]	Billion dollars	49.9	124.3	118.3	—	—	138.9
Farm production expenses[5]	Billion dollars	38.2	96.1	92.5	—	—	105.5
Net income before inventory adjustment[5]	Billion dollars	11.7	28.2	25.8	—	—	33.4
Agricultural Trade:							
Agricultural exports	Million dollars	—	—	2,519.4	2,431.9	2,356.4	2,877.3
Agricultural imports	Million dollars	—	—	1,393.7	1,475.1	1,234.6	1,388.6
Land Values:							
Average value per acre	Dollars	[7]168	[8]488	—	—	559	—
Total value of farm real estate	Billion dollars	[7]189	[8]512	—	—	584	—
Gross National Product:[5]	Billion dollars	796.3	2,107.6	1,992.0	—	—	2,265.6
Consumption	Billion dollars	490.4	1,340.1	1,276.7	—	—	1,444.7
Investment	Billion dollars	120.8	345.6	322.7	—	—	371.6
Government expenditures	Billion dollars	180.2	433.9	416.7	—	—	459.4
Net exports	Billion dollars	4.9	−12.0	−24.1	—	—	−10.3
Income and Spending:[6]							
Personal income, annual rate	Billion dollars	626.6	1,708.0	1,646.3	1,819.0	1,832.1	1,851.2
Total retail sales, monthly rate	Billion dollars	24.4	65.0	62.7	70.9	71.1	71.8
Retail sales of food group, monthly rate	Billion dollars	5.8	14.3	13.9	15.7	15.6	15.6
Employment and Wages:[6]							
Total civilian employment	Millions	74.4	94.4	93.3	96.3	96.6	96.8
Agricultural	Millions	3.8	3.3	3.3	3.2	3.3	3.3
Rate of unemployment	Percent	3.8	6.0	6.2	5.8	5.7	5.7
Workweek in manufacturing	Hours	40.6	40.4	40.4	40.1	40.2	—
Hourly earnings in manufacturing, unadjusted	Dollars	2.83	6.17	6.00	6.49	6.52	6.56
Industrial Production:[6]	1967=100	—	145.2	140.9	150.9	151.0	152.2
Manufacturers' Shipments and Inventories:[6]							
Total shipments, monthly rate	Million dollars	46,487	125,317	121,101	135,232	136,283	—
Total inventories, book value end of month	Million dollars	84,527	197,802	183,860	200,662	203,265	—
Total new orders, monthly rate	Million dollars	47,062	129,263	125,801	142,461	144,482	—

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